Testimony of

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**Subcommittee on Science, Technology, and Space**

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Thank you, Chairman Wyden, Senator Allen, and other distinguished members of the Science, Technology, and Space Subcommittee. It is an honor to have this opportunity to appear before you today and to assist in your efforts to strengthen our nation's information infrastructure and improve our capability to respond and recover from terrorist attacks and other emergencies.

I am Jeffrey M. Logan, Business Development Manager for M/A-COM Wireless Systems Inc. M/A-COM Wireless Systems is currently deploying fully interoperable statewide public safety radio systems in Pennsylvania and Florida. We have also recently been selected to provide county communications systems for Oakland County Michigan, and city communications for San Antonio and Oklahoma City. Our company is a world leader in the development and global manufacture of radio components and network solutions for the wireless telecommunications industry. Additionally, M/A-COM Wireless Systems is supported as a wholly owned unit of Tyco International, the world's largest manufacturer and servicer of electrical and electronic components.

I appreciate this opportunity to comment on S. 2037, the Science and Technology Emergency Mobilization Act, regarding recommendations for ensuring that emergency officials and first responders have access to effective and reliable wireless communications capabilities and the establishment of state pilot projects aimed at achieving interoperability for emergency preparedness agencies.

**The pursuit of Interoperability**

One of the key concerns for the first responders (police, fire, EMS) is interoperability. Lack of interoperability occurs when public safety personnel respond to the same emergency but cannot communicate with each other because they operate on incompatible radio systems or on different frequency bands. Lack of interoperability wastes time, wastes effort, and can risk lives. Safety of life and property can only be assured when public safety agencies can *easily* communicate with one another. All too often, the different systems they use preclude them from communicating at all. Agencies must have high-quality, interoperable communications at their disposal to ensure effective and timely coordination of disaster responses. Recent high-profile incidents, coupled with the events of Sept. 11, have drawn into sharp focus the need for voice radio interoperability both for routine day-to-day use and during emergencies.

"So poor were communications that on one side of the trade center complex, in the city's emergency management headquarters, a city engineer warned officials that the towers were at risk of "near imminent collapse," but those he told could not reach the highest-ranking fire chief by radio. Instead, a messenger was sent across acres, dodging flaming debris and falling bodies, to deliver this assessment in person. He arrived with the news less than a minute before the first tower fell."[1]

**Achieving interoperability**

[1] Jim Dwyer and Kevin Flynn "Before the Towers Fell, Fire Dept. Fought Chaos" *The New York Times*, January 30, 2002, pp. 1.

Interoperability is both a technology and a management challenge. Consideration should include training, organization, coverage, funding, frequency availability and incident coordination. It is our recommendations that state pilot projects should include both technical and non-technical considerations, as well as new approaches to policy, in the development of interoperability solutions. A number of states have already made significant headway toward interoperability. The establishment of state pilot programs should build on many of the innovative communication technology advances already achieved in states such as Pennsylvania, Maryland and Florida.

**What is the best way to achieve interoperability for our nations First Responders?**

One solution would be to require state and local governments to replace today's fully functional radios and infrastructure with new equipment that would be based on a single radio system standard. FEMA has estimated the cost to pursue this course to replace all our nation's public safety radio systems to be in excess of $40 billion. Creating a single radio system standard does not necessarily solve interoperability. Several operational issues including sufficient communications spectrum and channel management would still be needed to be resolved. However, networking standards such as established Ethernet and TCIP protocols should be leveraged to enable network-to-network communications and voice over IP applications. An alternate approach to interoperability is to interconnect existing systems into regional, statewide or national systems, which would provide multi-agency interoperability without requiring different agencies to purchase new radio equipment--for a fraction of the cost to replace all in-service radio systems. Interconnecting or networking existing systems is the quickest and most cost effective to deploy. This is because the network supports all existing radio infrastructure, allowing agencies to use radios, repeaters and frequency allocations that are already in place. We think this makes sense in order to optimize the President's proposed $1.3 billion first responder interoperability budget to as many

communities as possible.

## Best Practices

A good example of pioneering interoperability is underway right now on a statewide system in Pennsylvania. Back in 1995, when Governor Tom Ridge and Lt. Governor Mark Schweiker came to office, they inherited an antiquated radio system. The existing radio network was more than 20 years old and was becoming impossible to maintain. In fact, it really was a patchwork of several incompatible networks serving 23 state agencies. Former Governor Ridge recognized that the outmoded, stand-alone radio systems limited communications between state agencies and local government, particularly during emergencies. It also squandered opportunities for cost savings through shared equipment purchases and mutual aid agreements. As a result, in 1996, Governor Ridge launched a multi-year project to modernize and unify state agencies' two-way radio systems. M/A-COM was selected to provide the radio equipment for the project utilizing IP network technology.

This year, when the new system is fully deployed, it will tie Commonwealth agencies and participating local governments into a single, more reliable, high-capacity radio network. A key advantage of the new radio network is that state and local government will be able to communicate with each other through voice over IP networking technology. Additionally, system elements, such as radio towers and transmitters, will be shared across state agencies, thereby holding down costs. Most importantly, the new system will greatly enhance first responders' ability to respond to emergencies quickly and in a coordinated manner. In fact, Pennsylvania's new radio network, completed under Governor Mark Schweiker, will be the first truly interoperable statewide voice and data public safety radio system in the entire country.

## Conclusion

In summary, I commend the members of the subcommittee for their legislative efforts to enhance the security of our nation's infrastructure and our ability to respond to national emergencies. Lack of communications interoperability is not a new condition. We have two ways to address lack of interoperability. One solution would be to replace today's fully functional radios and infrastructure with new equipment at a prohibitive cost and years of deployment. An alternate approach is to connect existing systems together using voice over IP networking technology, immediately and affordably. M/A-COM Wireless Systems, Inc. stands ready to support government research and development in this area.

Thank you for the opportunity to appear before you today. I would be pleased to answer any questions you might have.